

Staff Assessment

# ORANGE GROVE PROJECT

Application For Certification (08-AFC-4)  
San Diego County



**CALIFORNIA  
ENERGY  
COMMISSION**

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**08-AFC-4**

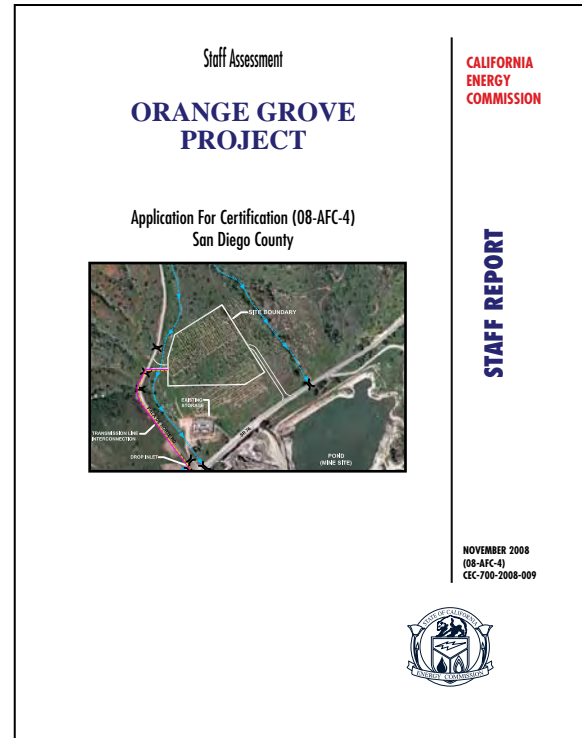
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**STAFF REPORT**

NOVEMBER 2008  
(08-AFC-4)  
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**ORANGE GROVE PROJECT  
(08-AFC-4)  
STAFF ASSESSMENT**

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# **EXECUTIVE SUMMARY**

Testimony of Felicia Miller, Project Manager

## **INTRODUCTION**

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The Staff Assessment (SA) contains the California Energy Commission staff's independent analysis and final recommendations on the Orange Grove Project (OGP). The proposed project is under the Energy Commission's jurisdiction and cannot be constructed or operated without the Energy Commission's certification. This SA examines engineering, environmental, public health and safety aspects of the proposed project. The SA analysis is based on the information provided by the applicant and other sources available at the time the analysis was prepared and contains analyses similar to those normally contained in an Environmental Impact Report required by the California Environmental Quality Act. When issuing a certificate, the Energy Commission is the lead state agency under the California Environmental Quality Act and its process is functionally equivalent to the preparation of an Environmental Impact Report.

The Energy Commission staff has the responsibility to complete an independent assessment of the project's potential effects on the environment, the public's health and safety, and whether the project conforms to all applicable laws, ordinances, regulations and standards. The staff also recommends conditions of certification to mitigate potentially significant adverse environmental effects and conditions for construction, operation and eventual closure of the project if approved by the Energy Commission. This SA is not a decision document for these proceedings, nor does it contain findings by the Energy Commission; it is a staff recommendation related to environmental and public health and safety impacts and the project's compliance with local, state and federal laws, ordinances, regulations and standards.

The SA will serve as staff's testimony in evidentiary hearings to be held by a Committee of two Commissioners who are hearing this case. The Committee will hold evidentiary hearings and will consider the recommendations presented by staff, the applicant, government agencies, all parties and the public prior to proposing its decision. The Energy Commission will make findings and provide a final decision after the Committee's publication and consideration of comments on its Presiding Member's Proposed Decision.

The analyses contained in this SA are based upon information from: 1) the Application for Certification; 2) subsequent amendments; 3) workshops and site visits; 4) responses to data requests; 5) additional information from federal, state and local agencies; 6) existing documents and publications; 7) independent research; and 8) public comments.

## **PROJECT LOCATION AND DESCRIPTION**

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The proposed OGP site is located on an 8.5-acre portion of an approximately 202-acre parcel, Assessor parcel No. 110-072-26, Section 32, Township 9S, Range 2W, San Bernardino B and M, in San Diego County. The site is located in an unincorporated area of northern San Diego County, approximately five miles east of the town of Fallbrook

and two miles west of the community of Pala. The site is located off State Route 76 (SR 76) approximately four miles from Interstate 15 (I-15). The proposed OGP is a 96-megawatt (MW) simple-cycle electric generating facility designed as a peaking facility to serve loads during peak demand. The power plant would use two combustion turbine generators (CTGs) that will be fueled with natural gas. High-efficiency emission control technologies will be provided to meet Best Available Control Technology (BACT) requirements. The CTGs will be equipped with power boost technology to increase output from the plant during warm or hot ambient temperature conditions. Demineralized, finely atomized water is injected into the compressor section of the engines, which reduces the heat of compression, and increases power output. The proposed project will utilize a packaged wet cooling tower for only the air inlet chiller system. Emissions will be controlled with a carbon monoxide (CO) emission oxidation catalyst, as well as an aqueous ammonia Selective Catalytic Reduction (SCR) system that will reduce emissions. Output of the generators would be connected to step-up transformers within an onsite switchyard that will require construction of an underground transmission circuit to be interconnected within the existing Pala substation. A more complete description of the project that includes site layout and regional maps is contained in the **PROJECT DESCRIPTION** section of this Staff Assessment.

## **PUBLIC AND AGENCY COORDINATION**

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Prior to the publication of the SA, the Energy Commission conducted a publicly noticed business meeting at which it accepted the OGP Application for Certification as complete and allowed comments on the proposed project. Staff sent notices informing property owners, libraries and agencies of the proposed project and sent copies of the Application for Certification to libraries, agencies and organizations. The Committee of two Commissioners assigned to oversee the OGP proceeding conducted an Informational Hearing, Issues Identification and Scheduling Conference on July 29, 2008 in Fallbrook, CA.

Staff conducted a publicly noticed Data Response and Issue Resolution Workshop in Fallbrook on September 11, 2008. The workshop allowed staff and the applicant to discuss data requests, data responses, and resolve issues. Additionally, the workshop provided opportunities to hear opinions on the project and the proceeding from intervenors, interested agencies, and members of the public. Staff also has coordinated directly with relevant local, state and federal agencies; such as the San Diego County Local Area Formation Commission (LAFCO), San Diego County Office of Planning and Land Use, North County Fire Protection District, California Department of Fish and Game, U.S. Fish and Wildlife Service, US Army Corp of Engineers, Fallbrook Public Utilities District, Rainbow Municipal Water District, California Department of Transportation, District 9, San Diego Regional Water Quality Control Board, San Diego Air Pollution Control District, Native American tribes and other interested parties.

## **ENVIRONMENTAL JUSTICE**

The steps recommended by the U.S. EPA's guidance documents to assure compliance with the Executive Order 12898 regarding environmental justice are: (1) outreach and involvement; (2) a screening-level analysis to determine the existence of a minority or low-income population; and (3) if warranted, a detailed examination of the distribution of

impacts on segments of the population. Though the Federal Executive Order and guidance are not binding on the Energy Commission, staff finds these recommendations helpful for implementing its environmental justice analysis. Staff has followed each of the above steps for the following 11 sections in the PSA: Air Quality, Hazardous Materials, Land Use, Noise, Public Health, Socioeconomics, Soils and Water, Traffic and Transportation, Transmission Line Safety/Nuisance, Visual Resources, and Waste Management. Over the course of the analysis for each of the 11 areas, staff considered potential impacts and mitigation measures, significance, and whether there would be a disproportionate impact on an environmental justice population.

The purpose of staff's environmental justice screening analysis is to determine whether a low-income and/or minority population exists within the potentially affected area of the proposed site. Staff conducted the screening analysis in accordance with the "Final Guidance for Incorporating Environmental Justice Concerns in USEPA's National Environmental Protection Act Compliance Analysis" (Guidance Document) dated April 1998. People of color populations, as defined by this Guidance Document, are identified where either:

- the minority population of the affected area is greater than 50% of the affected area's general population; or
- the minority population percentage of the area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

Staff has reviewed Year 2000 U.S. Census block data for the proposed project site which indicates a minority population of 31% and 13% low-income which does not exceed staff's screening threshold of greater than 50% within a six-mile radius of the proposed project site (**See Socioeconomics Figure 1**). Staff has determined that there are no threshold level concentrations of minority and low income populations within the six-mile radius of the project. Therefore, staff has concluded that the project does not result in any significant unmitigated impacts to an environmental justice population.

## **STAFF'S ASSESSMENT**

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Each technical area section of the Staff Assessment contains a discussion of impacts, and where appropriate, mitigation measures and conditions of certification. The Staff Assessment includes staff's assessments of:

- the environmental setting of the proposal;
- impacts on public health and safety, and measures proposed to mitigate these impacts;
- environmental impacts, and measures proposed to mitigate these impacts;
- the engineering design of the proposed facility, and engineering measures proposed to ensure the project can be constructed and operated safely and reliably;
- project alternatives;

- compliance of the project with applicable laws, ordinances, regulations and standards during construction and operation;
- proposed conditions of certification; and
- project closure.

## OVERVIEW OF STAFF'S CONCLUSIONS

Staff's final analysis indicates that the project's impacts in all areas would be mitigated to levels that are less than significant. Staff believes that as currently proposed, including the applicant's and the staff's proposed mitigation measures and the staff's proposed conditions of certification, the Orange Grove Project does comply with all applicable laws, ordinances, regulations, and standards (LORS).

**Technical Sections Status Table**

<b>Technical Discipline</b>	<b>Impacts Mitigated</b>	<b>Complies with LORS</b>
Air Quality	x	x
Alternatives	X	x
Biological Resources	x	x
Cultural Resources	x	x
Efficiency	x	x
Facility Design	x	x
Geology, and Paleontological Resources	x	x
Hazardous Materials	x	x
Land Use	x	x
Noise and Vibration	x	x
Public Health	x	x
Reliability	x	x
Socioeconomics	x	x
Soil and Water Resources	x	x
Traffic and Transportation	x	x
Transmission Line Safety/Nuisance	x	x
Transmission System Engineering	x	x
Visual Resources	x	x
Waste Management	x	x
Worker Safety/Fire Protection	x	x

## CONCLUSIONS

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The SA is staff's testimony for the OGP, and as such, is part of the overall project discovery process and suggests resolution of issues identified in this document. Each technical area assessment in the SA includes a discussion of the project and the existing environmental setting; the project's conformance with laws, ordinances, regulations and standards (LORS); whether the facility can be constructed and operated safely and reliably; project specific direct and cumulative impacts; the environmental consequences of the project using the proposed mitigation measures; conclusions and recommendations; and any proposed conditions of certification under which the project should be constructed and operated, should it be approved.

The suggested resolution of the issues discussed in this document are a result of workshops, agreements between the applicant and appropriate agencies, comments received by involved parties and staff's professional opinions.

Staff's analysis indicates that OGP can be built with no significant unmitigated impacts, and is in conformance with all Laws, Ordinances, Regulations and Standards.



# INTRODUCTION

Felicia Miller, Project Manager

## PURPOSE OF THIS REPORT

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The Staff Assessment (SA) presents the California Energy Commission (Energy Commission) staff's independent analysis of the Orange Grove Energy, LP (OGE or Applicant) Application for Certification (AFC). The SA is a staff document. It is neither a Committee document nor a draft Energy Commission decision. The Committee is comprised of two commissioners who have been assigned to the project to oversee the progress of the case. The SA describes the following:

- the proposed project;
- the existing environmental setting;
- whether the facilities can be constructed and operated safely and reliably in accordance with applicable laws, ordinances, regulations, and standards (LORS);
- the efficiency and design of the proposed technology;
- the environmental consequences of the project, including potential public health and safety impacts;
- a cumulative analysis of the potential impacts of the project, along with potential impacts from other existing and known planned developments;
- mitigation measures proposed by the Applicant, staff, interested agencies, and intervenors that may lessen or eliminate potential impacts;
- the proposed conditions under which the project should be constructed and operated, if it is certified;
- project alternatives; and
- the requirements for project closure.

The analyses contained in this SA are based upon information from the AFC, supplemental information from the applicant, responses to data requests, comments and recommendations from local and state agencies, existing documents and publications, and independent field studies and research. The analyses for most technical areas include discussions of proposed conditions of certification. Each proposed condition of certification is followed by a proposed means of verification. The verification is not part of the proposed condition, but is the Energy Commission Compliance Unit's method of ensuring post-certification compliance with adopted requirements. The SA presents conclusions and proposed conditions of certification that apply to the design, construction, operation, and closure of the proposed facility.

The Energy Commission staff's analyses were prepared in accordance with Public Resources Code section 25500 et seq., Title 20, California Code of Regulation section 1701 et seq., and the California Environmental Quality Act (CEQA) Public Resources Code section 21000 et seq.

## **ORGANIZATION OF THE STAFF ASSESSMENT**

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The SA contains an Executive Summary, Introduction, Project Description, Project Analysis, and Project Alternatives. The environmental, engineering, and public health and safety analysis of the proposed project is contained in a discussion of 19 technical areas. Each technical area is addressed in a separate chapter: air quality, biological resources, cultural resources, geological and paleontological resources, hazardous material management, land use, noise and vibration, public health, socioeconomics, soil and water resources, worker safety and fire protection, transmission line safety, waste management, traffic and transportation, visual resources, facility design, power plant reliability, power plant efficiency, and transmission system engineering. A discussion of facility closure, project construction and operation compliance monitoring plans, and a list of staff that assisted in preparing this report follow the chapters.

Each of the 19 technical area assessments includes a discussion of:

- laws, ordinances, regulations, and standards;
- the regional and site-specific setting;
- project-specific and cumulative impacts;
- mitigation measures;
- closure requirements;
- conclusions and recommendations; and
- conditions of certification for both construction and operation (if applicable).

## **ENERGY COMMISSION SITING PROCESS**

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The Energy Commission has the exclusive authority to certify the construction and operation of thermal electric power plants 50 megawatts (MW) or larger. The Energy Commission certification is in lieu of any permit required by state, regional, or local agencies and federal agencies to the extent permitted by federal law (Pub. Resources Code, §25500). The Energy Commission must review power plant AFCs to assess potential environmental impacts including potential impacts to public health and safety, potential measures to mitigate those impacts (Pub. Resources Code, §25519), and compliance with applicable governmental laws or standards (Pub. Resources Code, §25523 [d]).

The Energy Commission's siting regulations require staff to independently review the AFC and assess whether the list of environmental impacts contained is complete and whether additional or more effective mitigation measures are necessary, feasible, and available (Cal. Code Regs., tit. 20, §§1742 and 1742.5[a]). Staff's independent review shall be presented in a report (Cal. Code Regs., tit. 20, §1742.5).

In addition, staff must assess the completeness and adequacy of the health and safety standards and the reliability of power plant operations (Cal. Code Regs., tit. 20,

§1743[b]). Staff is required to coordinate with other agencies to ensure that applicable laws, ordinances, regulations, and standards are met (Cal. Code Regs., tit. 20, §1744[b]).

Staff conducts its environmental analysis in accordance with the requirements of the California Environmental Quality Act. No Environmental Impact Report (EIR) is required because the Energy Commission's site certification program has been certified by the Resources Agency (Pub. Resources Code, §21080.5 and Cal. Code Regs., tit.14, §15251 [k]). The Energy Commission acts in the role of the CEQA lead agency and is subject to all other portions of CEQA.

Staff typically prepares both a preliminary and final staff assessment. However, to adhere to agreed upon timelines for this project, staff will prepare a SA only. The SA presents for the Applicant, intervenors, agencies, other interested parties, and members of the public, the staff's final analysis, conclusions, and recommendations.

Staff uses the SA to resolve issues between the parties and to narrow the scope of any adjudicated issues in the evidentiary hearings. After publication of the SA, staff will conduct a workshop to discuss its findings, proposed mitigation, and proposed compliance monitoring requirements. Based on the workshop and written comments, staff will submit final conditions of certification to reflect areas where the parties have reached agreement in a joint stipulation document.

The staff's SA is only one piece of evidence that the Committee will consider in reaching a decision on whether or not to recommend that the full Energy Commission approve the proposed project. At the public hearings, all parties will be afforded an opportunity to present evidence and to rebut the testimony of other parties, thereby creating a hearing record on which a decision on the project can be based. The hearing before the Committee also allows all parties to argue their positions on disputed matters, if any, and provides a forum for the Committee to receive comments from the public and other governmental agencies.

Following the hearings, the Committee's recommendation to the full Energy Commission on whether or not to approve the proposed project will be contained in a document entitled the Presiding Members' Proposed Decision (PMPD). Following publication, the PMPD is circulated for a minimum of 30 days in order to receive written public comments. At the conclusion of the comment period, the Committee may prepare a revised PMPD. A revised PMPD must undergo a 15-day comment period. At the close of the comment period for the revised PMPD, the PMPD is submitted to the full Energy Commission for a decision. Within 30 days of the Energy Commission decision, any party may request the Energy Commission to reconsider the decision.

A Compliance Monitoring Plan and General Conditions will be assembled from conditions contained in the SA and other evidence presented at the hearings. The Compliance Monitoring Plan and General Conditions will be presented in the PMPD. The Energy Commission staff's implementation of the plan ensures that a certified

facility is constructed, operated, and closed in compliance with the conditions adopted by the Energy Commission. Staff's proposed Compliance Monitoring Plan and General Conditions are included at the end of this PSA.

## **AGENCY COORDINATION**

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As noted above, the Energy Commission's certification is in lieu of any permit required by state, regional, or local agencies and federal agencies to the extent permitted by federal law (Pub. Resources Code § 25500). However, the Energy Commission typically seeks comments from and works closely with other regulatory agencies that administer laws, ordinances, regulations, and standards that may be applicable to proposed projects. These agencies include the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, State Water Resources Control Board/Regional Water Quality Control Board, California Department of Fish and Game, and California Air Resources Board. Additionally, the Energy Commission works closely with local air and water districts and building and planning departments to include local government officials.

# PROJECT DESCRIPTION

Felicia Miller, Project Manager

## INTRODUCTION

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On June 19, 2008, Orange Grove Energy, LP (OGE or Applicant), filed an Application for Certification (AFC) seeking approval from the California Energy Commission (Energy Commission) to develop the Orange Grove Project (OGP). On July 9, 2008, the Energy Commission accepted the AFC as complete, thus starting the Energy Commissions' formal review of the proposed project.

## PURPOSE OF PROJECT

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The OGP is in response to a San Diego Gas & Electric (SDG&E) "Request for Offer" for peaking power to serve loads during high electricity peak demand periods. The project site is owned by SDG&E and will be available to the applicant for the purpose of building and operating the project, if the Energy Commission approves the project, through a 25-year tolling agreement that allows SDG&E to provide natural gas to the project, and utilize 100% of the proposed plant electrical output.

## PROJECT LOCATION

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The proposed OGP would be constructed on an approximately 8.5-acre site that is part of an approximately 202-acre property. The site is located in an unincorporated area of northern San Diego County, approximately five miles east of the town of Fallbrook and two miles west of the community of Pala. The site is located off State Route 76 (SR 76) approximately four miles from Interstate 15 (I 15). (**Project Description Figure 1**) The region is primarily rural, with some agriculture dispersed around open space. Low density residential and small communities are also found within the region. In close proximity to the project site, a future land fill is planned as well as an expansion to an existing hotel and casino.

The transmission line interconnection will be entirely within the SDG&E property and will be constructed and owned by OGE between the site and the substation boundary. OGE will obtain a 20-foot-wide easement from SDG&E for the underground transmission line between the site and the existing Pala substation.

The site does not have any undisturbed natural habitat. The majority of the site has been used for agriculture and is occupied by a former citrus grove. Adjacent and south of the site, across the SR 76, is a former aggregate mine within the San Luis Rey River bed, where ground water intercepts the mine pits forming ponds. The mine pits are owned by a local tribe, which has no plans for further development of the site.

## POWER PLANT EQUIPMENT AND LINEAR FACILITIES

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The proposed OGP is a 96-megawatt (MW) simple-cycle electric generating facility designed as a peaking facility to serve loads during peak demand. The power plant

would use two combustion turbine generators (CTGs) that will be fueled with natural gas. High-efficiency emission control technologies will be provided to meet Best Available Control Technology (BACT) requirements. The CTGs will be equipped with power boost technology to increase output from the plant during warm or hot ambient temperature conditions. Demineralized, finely atomized water is injected into the compressor section of the engines, which reduces the heat of compression, and increases power output. The proposed project will utilize a packaged wet cooling tower for only the air inlet chiller system. Emissions will be controlled with a carbon monoxide (CO) emission oxidation catalyst, as well as an aqueous ammonia Selective Catalytic Reduction (SCR) system that will reduce emissions. Noise control features will include sound walls that will be constructed around the combustion turbines, the inlet chiller and cooling tower, and the fuel gas compressors to control noise from the plant. Output of the generators would be connected to step-up transformers within an onsite switchyard that will require construction of an underground transmission circuit, to be interconnected at the existing Pala substation.

The following are the major components of the power plant:

- two General Electric (GE) LM6000 PC SPRINT combustion turbine generators (CTGs) equipped with GE's SPRay-INTERcooled (SPRINT) power boost technology,
- inlet air chiller cooling tower;
- chilled water system package;
- a 0.3-mile underground transmission line from the project to the Pala Substation;
- a 10-inch, approximately 2.4-mile length of natural gas lateral pipeline connected to the SDG&E main gas line;
- a 535,000-gallon raw water-fire water storage tank;
- a 275, 000 gallon demineralized water storage tank;
- a CO oxidation catalyst, as well as an aqueous ammonia SCR system;
- a gas-fired black start generator; and
- a diesel emergency fire water pump.

## **NATURAL GAS SUPPLY**

Natural gas would be supplied to the OGP from an existing SDG&E 16-inch gas main located near the intersection of Rice Canyon Road and SR 76. An approximately 2.4- mile underground gas pipeline will be constructed from the gas main to the project site to convey natural gas to the project. A new 10-inch pipeline will be constructed with a metering station located near the tie-in point of the gas main. (**Project Description Figure 2**)

## **WATER SUPPLY**

The OGP would require approximately 62 acre feet per year (AFY) for fresh water and 38.7 AFY for reclaimed tertiary treated water to meet its operational needs if the facility operates at the maximum allowable number of hours. It is highly likely the facility will operate at a fraction of the maximum hours (i.e., up to 6400 hours/year). Therefore, it is

expected that plant operation will consume around 21 AFY of fresh water and 12 AFY of reclaimed water. Orange Grove Energy has obtained rights to purchase water for the project from Fallbrook Public Utilities District (FPUD). Water will be picked up from two offsite pickup locations that will be constructed, owned and operated by FPUD. The fresh water pickup station is in Fallbrook, approximately 9.0 miles west of the site. The reclaimed water pickup station, also in Fallbrook, will be located within an existing FPUD water reclamation plant facility approximately 15.6 miles from the project site.

Water will be trucked to the project site using new single-trailer semi trucks with a capacity of approximately 6,500 gallons. Water hauling will entail approximately one truck per hour for fresh water and one truck per hour for reclaimed water during times when the plant is operational.

## **WASTEWATER AND STORM WATER DISCHARGE**

Sanitary wastewater will be managed with an onsite septic system. Process wastewater consisting of blowdown water from the chiller system cooling towers and other non-oily wastewater streams will be collected and recycled using an onsite reverse osmosis (RO) water treatment system. Only a few hundred gallons per month of wastewater will not be recyclable onsite and will need to be trucked offsite for treatment at a licensed facility. With the RO system to recycle process wastewater onsite, the plant will function with essentially zero liquids discharge technology that eliminates wastewater and reduces water use. Surface drainage from the plant will flow to an on-site detention basin designed to receive flows from a 100-year storm and to manage storm water runoff in accordance with local ordinances.

## **HAZARDOUS WASTE**

Hazardous wastes generated by the plant would include spent selective catalytic reduction and oxidation catalyst, used oil filters, used oil and chemical waste. Recycling will be the preferred waste management practice wherever possible. All other wastes will be disposed of in accordance with applicable laws, ordinances, regulations and standards at appropriately licensed waste disposal facilities.

## **TRANSMISSION SYSTEM**

Construction of the electric transmission line interconnection to the Pala substation will occur within the limits of SDG&E's contiguous property. The transmission line interconnection will be installed in a 0.3-mile long, 69 kilovolt (kV), single circuit, underground transmission line, and for most of the transmission line interconnection length, installation will occur in a common trench with the gas pipeline. (**Project Description Figure 2**)

## **PROJECT CONSTRUCTION AND OPERATION**

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If approved by the Energy Commission, OGE proposes to initiate construction of the OGP in April 2009, provided there are no delays. The construction period is expected to last approximately six months, with scheduled commercial operations beginning October 1, 2009. The on-site construction workforce would peak at approximately 105 workers in the fifth month of construction, and average 70 workers over the construction

period. Construction hours will typically occur between 7 a.m. and 6 p.m. Monday through Friday. Operation and maintenance of the OGP will require nine full-time permanent staff. Construction costs are estimated to be approximately \$100 million.

Primary construction access would be from I-5 to SR 76. Five acres of the approximately 202-acre parcel will serve as a laydown area accommodating storage of construction materials, equipment, construction offices, and parking, which OGE proposes to restore and re-vegetate after construction is complete.

## **REFERENCES**

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OGE2008a – S. Thome (tn46770) Application for Certification Orange Grove Energy dated 6/19/08. Submitted to Dockets 6/19/08.



**PROJECT DESCRIPTION - FIGURE 1**  
Orange Grove Project - Local Setting

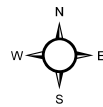
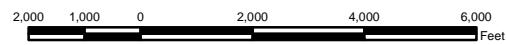
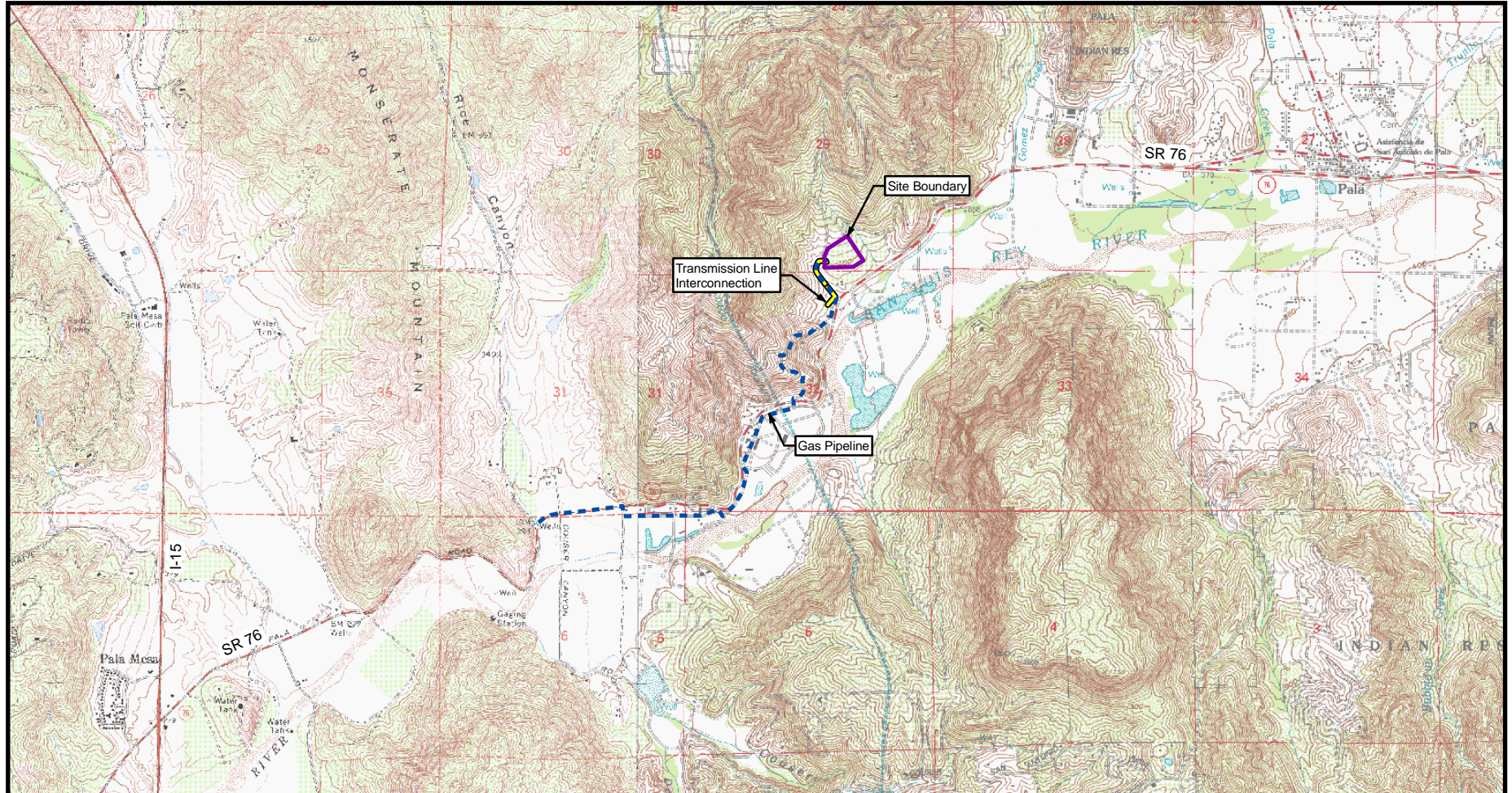


CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION, NOVEMBER 2008  
SOURCE: AFC Figure 6.5-3



**PROJECT DESCRIPTION - FIGURE 2**  
Orange Grove Project - Project Vicinity and Linear Facility Routes

NOVEMBER 2008



PROJECT DESCRIPTION

# **ENVIRONMENTAL ASSESSMENT**